CAR CARE GUIDE

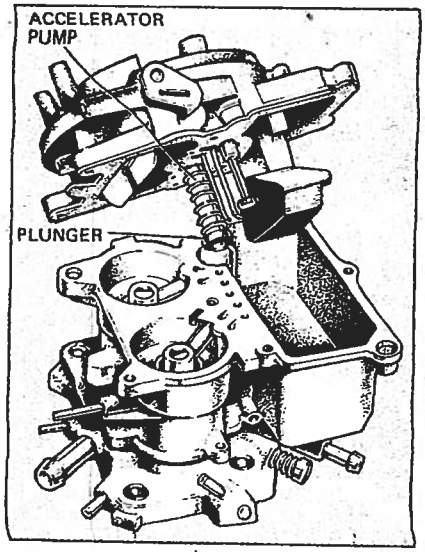
SECTION 8. ENGINE HESITATION

"Why Does My Engine Balk When I Step On It?"

You've tuned up the engine—there are new plugs, all adjustments have been made to the carmaker's specification and so forth. Still, when you attempt to accelerate, the engine stumbles. Why?

Some of the likely causes include:

- The vacuum break is ruptured
- The accelerator pump is damaged
- The thermostatic air-cleaner valve hangs up.



Faulty accelerator pump may have a weak spring or plunger that's become brittle.

In addition to these you can add vacuum-hose leaks, an air leak at the carburetor-manifold joint and damaged ignition wires.

Defining the problem

Let's make sure that we're speaking about the same problem: Stumbling, flat-spot acceleration, hesitating and faltering are defined as a momentary lack of response as you push down the accelerator pedal. Although this trouble can occur at any speed, it is usually most pronounced when you take off from a dead stop.

The condition doesn't usually cause the engine to stall. However, it could—if the problem is severe enough.

Once you are satisfied that the engine is properly tuned, follow this diagnostic approach as you try to get to the bottom of the problem:

1. Examine vacuum hoses (see Section 3). Look for an air leak at the carburetor-manifold joint (see Section 2), and also examine and test the ignition wires (see Section 1).

2. If stumbling on acceleration occurs only when the engine is cold, check operation of the automatic choke. Also test to make sure that the valve in the thermostatic air-cleaner snorkel closes when the engine is cold. Incidentally, if the engine is warm when you are performing this test, wrap some ice in a rag and hold it over the sensor, which is located in the air-cleaner housing. The valve should close with the engine running. Test the action of the accelerator pump (see below).

How to test the choke vacuum break

The purpose of the choke vacuum break is to help the choke plate overcome the resistance that's imposed by the thermostatic spring when the engine is beginning to warm and the choke plate is opening. The "pull" on the choke plate by the vacuum break opens the plate slightly to lean the fuel mixture just enough to avert performance problems caused by an overly rich mixture.

When a vacuum break fails, the choke plate will remain closed until the engine gets warm enough for the thermostatic spring to release its grip. In the several minutes it takes for warm-up, the overly rich fuel mixture can cause the engine to stumble on acceleration.

To find out if the vacuum break is working as it should, follow the procedure outlined below:

1. Start the engine and then pull the hose away from the vacuum break chamber.

2. Close the end of the vacuum hose by pressing your thumb against it. Do you feel a strong pull (vacuum)? If not, check to see that the other end of the hose is connected to the vacuum source, and that the hose isn't kinked or split.

3. Turn off the engine and reconnect the hose to the vacuum break chamber.

4. Now, disconnect the same hose at the other end, that is, at the vacuum source. Attach your hand vacuum pump to the hose.

5. Keeping your eye on the link connecting the vacuum break to the choke actuator lever, pump up the vacuum. This should cause the link to move. If it doesn't, you should replace the vacuum break.

How to check the accelerator pump

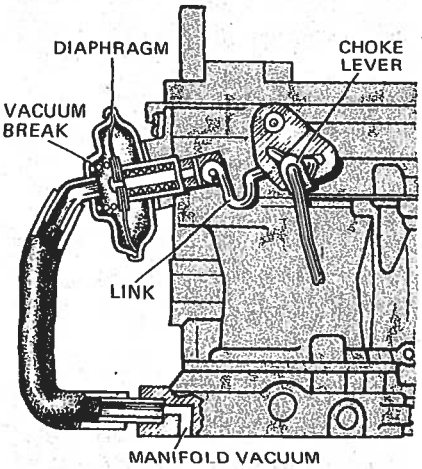
The accelerator pump is a device that provides a steady stream of fuel within the carburetor when you suddenly depress the throttle. This quick action is designed to prevent the mixture from suddenly becoming very lean, which, in turn, results in the feeling of hesitation.

Some accelerator pumps provide fuel by means of a leather or synthetic plunger that pushes the fuel out of a reservoir past a check valve, and through a nozzle which is aimed at the carburetor bore. Other types of accelerator pumps depend on a diaphragm to move the fuel. In either case, the movement of the throttle linkage actuates the pumping mechanism. If the plunger or diaphragm should be defective, the accelerator pump won't function.

1. Remove the air cleaner from the carburetor.

2. With the engine turned off and the choke valve open, move the throttle valve once or twice while looking for gas to squirt into the carburetor.

3. If there's a weak squirt or none at all, replace the accelerator pump. To do this consult a car repair manual for procedure. After installing the new pump, make adjustments conforming to the manufacturer's specifications. **PM**



Vacuum break opens choke slightly when engine starts in order to stop flooding.